

them have yet flowered. Yet I am convinced that in this plant careful observation will clear up the matter. I may refer to the peculiar glands which surround the female flowers, with which solitary imperfect anthers might be easily confounded*.

Parthenogenesis certainly does not occur in plants with evident sexual organs.

Petersburg, Aug. 13, 1858.

XV.—*Further Gleanings in British Conchology*.

By J. GWYN JEFFREYS, Esq., F.R.S.

[Concluded from page 43.]

[With a Plate.]

Gasteropoda Prosobranchiata.

Chiton gracilis, n. s. Pl. III. fig. 9 a, b.

Testa elongato-oblonga, convexa, colore vario; valvulis clypeiformibus; rostris prominentibus, mucronibus subacutis; areis rostralibus lineatis, fere æque latis; granulis numerosis, inter *Ch. fascicularem* et *Ch. discrepantem* media; fasciculis brevibus, 18 ut in congeneribus et 1 ad termini postremi medium dispositis; vitta marginali lata, coriacea, setulis perbrevibus caducis sparsis oblecta; margine crinito; long. 1, lat. $\frac{1}{2}$ unc.

I detected several specimens of this new and interesting species, mixed with *Chiton fascicularis*, among some shells of Mr. Damou which had been dredged in deep water at Weymouth; and Mr. Metcalfe also procured it, many years ago, in the same locality. Mr. M'Andrew took the same species, in 1848, by dredging off Milford Haven, and considered it to be *C. discrepans*. It, however, differs from that species in its more elongated and arched form, the granules being less numerous, the tufts less developed, and the margin much less hairy; from *C. fascicularis* it may be known by the same distinctive marks, except that the granules are less numerous in that species; and from both of those species in the marginal band being coriaceous, as in *C. marmoreus*, and in having an additional tuft at the posterior extremity. In order to further elucidate the distinction of these three species (viz. *C. fascicularis*, *discrepans*, and *gracilis*), I have given, in Pl. III. figs. 9 b, 10 & 11, representations of their lingual ribands or tongues, by which it will be seen that they all essentially differ from each other. These species, as well as *C. Hanleyi*, belong to the genus *Acanthochætes* of Leach. *C. gracilis* is more probably the *C. discrepans* of Brown than the species which the late Mr. G. B. Sowerby named "*crinitus*;" but as the former

* The author does not appear to be aware that the characters of the male flowers of *Calebogyne* are well known. M. Baillon has proposed the same unsatisfactory explanation of this case.—A. II.

name has now been generally adopted for Sowerby's species, it seems a pity, by restoring the latter, to create more confusion, especially as the *crinitus* of Pennant is different from either of them.

C. Hanleyi, ii. 398. A specimen in my possession, from the Shetlands, measures no less than $\frac{5}{8}$ ths of an inch in length, and rather more than $\frac{1}{3}$ rd of an inch in breadth.

Patella vulgata, ii. 421. I was amused at seeing a party enjoying a limpet meal on the little Isle of Herm. It consisted of a farmer, two of his labourers, and a sheep-dog. This meal formed their dinner, and took place on a grassy plot near the sea-shore. The limpets were cooked by being laid on the ground in their natural position and covered with a heap of straw which was set fire to. When cooked, they were eaten with bread and butter; and I can answer for their being well-flavoured.

Calyptrea Sinensis, ii. 463. Weymouth (Mr. Thompson). I found at Serk specimens attached to small loose stones which had scarcely a broader surface than the circumference or base of the shell, and into the sinuosities of which they were closely moulded. It would therefore seem that they do not quit their position, like the limpets, but that their food is brought to them. The nucleus or inner circle of this circumference, showing the point of their attachment, is quite smooth, and apparently worn by the action of the foot; while the outer circle or rim is sometimes encrusted with *Melobesia polymorpha*, which thus grows inside the shell.

Fissurella reticulata, ii. 469. I found two or three shells, by dredging in Guernsey, which agree with the *F. costaria* of Deshayes. One of them has seventy-two longitudinal ribs and costellæ; but specimens of *F. reticulata* vary much in this respect, as well as in the comparative convexity and proportions of the shell. They may, however, be distinct species.

Haliotis tuberculata, ii. 485. The principal use to which the shells now appear to be put in the Channel Isles is to frighten away small birds from the standing corn,—two or three of them being strung together and suspended from a stick, so as to make a clatter when moved by the wind. The importation from southern climes of *Meleagrina* and other nacreous shells, has superseded the use of our native shells for inlaying and ornamental work.

Trochus umbilicatus, ii. 521. Var. spira elatiore, umbilico fere clauso. This remarkable variety, which Mr. Hanley noticed as having occurred to him at Herm, is abundant on every part of the coast of Guernsey at low water. Dr. Lukis observes that it inhabits quite a distinct zone from the typical form, and that they are never found together; and he is inclined to believe that the variety remains under water, while the ordinary kind seems ever endeavouring to crawl out of the vessel in which both are kept. In adult specimens the umbilicus is entirely closed, but in the young it is partially open. The animals do not appear to present any difference either in their external form and organs, or in their tongues. Mr. Rupert Jones has found the same variety in Jersey.

T. lineatus, ii. 525. Weymouth (Mr. Thompson).

Margarita pusilla (*Trochus*), ii. 534. Arran, N. B. (*Rev. Mr. Norman*).

M.? *costulata* (Skenea?), iii. 167. Mr. Bean informs me that he has obtained a specimen of this very rare shell from Lamlash Bay, in the west of Scotland.

Lacuna crassior, iii. 67. Weymouth (*Mr. Thompson*); Hunstanton (*Rev. Mr. Norman*).

Assiminia littorea, iv. 265. This occurs rather plentifully in Serk, and near the Chesil Bank, off the Isle of Portland; and I had opportunities of verifying the description of the animal as given by the late Professor Forbes, at the same time with that of *A. Grayana*, specimens of which Dr. Halley kindly sent me alive for that purpose. Both are decidedly Pectinibranch. A representation of the tongue of each will be found in Pl. III. figs. 12 & 13. Philippi seems most strangely to have given a very different account of the animal of *A. littorea* (both in Wiegmann's 'Archiv' and in his own work on the Sicilian Testacea) as regards the position of the eyes. His *Truncatella littorina* is evidently the same species; and I have it from Sardinia and the coast of Piedmont. It appears to be allied, both conchologically and by its habits, to some shells in the British Museum collected by Mr. Macgillivray, and presented by the Admiralty, which are stated to have been found in Norfolk Island on stones at high-water mark.

Rissoa striatula, iii. 75. Whitesand Bay; Clyde district (*Rev. Mr. Norman*).

R. abyssicola, iii. 86. A shell which Mr. Alder received from Professor Lovén under the name of "*Rissoa sculpta*," and kindly forwarded to me for examination, unquestionably belongs to this species, which, as well as *R. cimicoides*, appears to have been mistaken for the *R. sculpta* of Philippi. Lovén has not given in his work any description or diagnosis to identify his species, to which he referred that of Philippi.

R. cimicoides. *R. sculpta*, B. M. iii. 88 (non Phil.). Exmouth (*Mr. Clark*).

R. rufilabrum, iii. 106. Weymouth (*Mr. Thompson*).

R. labiosa, iii. 109. The solid variety from Helford, Cornwall; the thin, from Herm (*Rev. Mr. Norman*). A dwarf and thin variety is also found in Arnolds' pond, Guernsey.

R. inconspicua, iii. 113. Specimens of this variable shell, which were received by Mr. Alder from Professor Lovén, under the name of "*Rissoa albella*," and by the former forwarded to me for examination, appear to agree with our variety *albula*.

R. ventrosa, iii. 138. Clevedon (*Rev. Mr. Norman*).

R. subumbilicata. *Turbo subumbilicatus*, Mont. Test. Brit. ii. 316. *R. ulvæ*, var., B. M. iii. 142. Southampton and Guernsey. This appears to be a different species from *R. ulvæ*, with which it is found. The shell is more oval and slender, and the last whorl is much larger in proportion to the rest. But further observation is desirable.

R. denticulata. *Turbo denticulatus*, Mont. T. B. ii. 315. Mr.

Lukis found a specimen of this curious shell at Herm many years ago, and obligingly presented me with it. It bears a suspicious resemblance to the *Rissoa crassicosta* of the late Professor C. B. Adams, which is described in his 'Synopsis Conchyliorum Jamaicensium,' &c., p. 6; but my specimen, as well as Montagu's description, shows no trace of the numerous and very fine transverse striæ which cross the ribs in the West Indian shell. My shell has not the columellar tubercles noticed by Montagu; and his description may have been taken from a broken specimen, in which the sutural extremities of the ribs were left on the pillar lip, so as to give the appearance of tubercles.

R. unica. Aclis unica, iii. 222. I had overlooked Mr. Clark's excellent paper on the animal, which was published in the 'Annals of Natural History' for 1854, p. 122, and in which he clearly made it out to be a *Rissoa*. I am also satisfied, on conchological grounds, that it ought to be placed in that genus, and not in *Aclis* or *Chemnitzia*.

Barleeia rubra (Clark). *Rissoa rubra*, iii. 120. Bantry (Rev. Mr. Norman); var. *alba*, *pellucida*. Serk, on *Codium tomentosum*. This may be the variety noticed by Montagu (Test. Brit. ii. 321). The bright-red colour of the operculum (with its peculiar spike, like that of a *Neritina*) contrasts singularly with that of the shell.

Jeffreysia diaphana, iii. 152. Falmouth; Penzance; Cumbræ; Bantry (Rev. Mr. Norman). In its stomach Mrs. Collings detected a species of *Lithocystis*, allied to *L. Allmanni*.

J. opalina, iii. 154. Cumbræ (Rev. Mr. Norman).

J.? Gulsonæ. *Odostomia Gulsonæ*, iv. 281; var. *minor*. I found a specimen of this variety at Guernsey, which was not larger than the *Odostomia minima*.

Cæcum glabrum, iii. 181. Clyde district (Rev. Mr. Norman). The curious form and structure of the operculum suggest the affinity of this genus to *Bifrontia*.

Euomphalus nitidissimus. Skenea? nitidissima, iii. 158. I will now, without preface, introduce this anomalous and strange-looking creature by the representation given in Pl. III. fig. 15 *a, b*, and 16 *a-c*. While I was at Serk last autumn, I had the good fortune to observe, with the aid of an excellent microscope, for several hours, the form and motions of the animal,—comparing with it, at the same time, *Skenea planorbis*, an animal supposed to be its congener, but which is, in fact, totally dissimilar in respect of the soft parts as well as of the shell. Both are abundant almost everywhere on our rocky coasts, especially on the *Codium tomentosum*, which appears to constitute the food of these and other phytophagous mollusks; and it is strange that the animal of the *Euomphalus nitidissimus* has so long escaped observation. The following is a description of it, as taken on the spot:—

Animal flaky-white, nearly hyaline; it has no vestige of any tentacles, but instead of them it is provided with a large broad veil, which is bilobed in front, and has its outer margin fringed with short and close-set but irregularly disposed cilia. Some of these cilia are

longer than the rest. There are a few of them also on the upper edge of the operculigerous lobe. The veil is flexible (probably serving the purpose of tentacles), and so transparent, that when it is extended beyond the foot, the latter can be seen through it. Foot rounded in front and pointed behind; it is stout and large for the size of the animal. Eyes two, very large in proportion, seated on the veil about half-way between the anterior edge of the shell and the terminal lobes of the veil; they do not appear to be raised at all above the level of the veil, and are not placed on peduncles or protuberances of any kind. When the creature is withdrawn within its shell, the eyes seem to reconnoitre you like a porter from a hall-window. Operculum very thin and paucispiral, with oblique striæ, which radiate from the suture and extend half-way across. I did not observe any other appendages. The animal is at first shy; but when undisturbed for some time, it crawls freely and rapidly, like a snail, with its shell edgewise in a perpendicular position and quite straight; and it also occasionally swims like the *Rissoæ* and other Gasteropods. It seems to be more comfortable near the sides of the watch-glass, for which it makes at once after being replaced in the water. I observed several specimens of different ages; and all of them presented the same appearance and habits.

I believe it will thus be seen that it resembles no known mollusk. It is true that the *Bullidæ* have no tentacles, and that some of them are furnished with eyes; but I am not aware that any possess the peculiar cilia which fringe the veil or anterior part of the head in this animal. It is also certain that none have an operculum,—while the shell, which is not an unimportant part of the animal, is totally different. I am also not aware of any recent *marine* generic analogue, as far as the shell is concerned, though this has in every particular the form of a freshwater *Planorbis*. As it is evidently not a *Skenea*, the question is whether a new genus should be formed for its reception. Captain Brown placed it in his genus *Spira*; but as one of the principal characters assigned by him to that genus is shell “nearly globular or semi-oval,” which is by no means applicable to this species, and as *Spira* embraces a heterogeneous assemblage of minute and immature shells from Walker (viz. *Helix globosa*, *tubulata*, and others), I do not think it can be properly retained there. Without, however, attempting to found a new genus, I believe the same object will be attained (at least provisionally) by adopting the genus *Euomphalus* of Sowerby, which, constituted for fossil shells of the mountain limestone, seems to be exactly suited for the shell in question. The generic characters given by Sowerby in his ‘*Mineral Conchology*,’ vol. i. p. 97, are as follows: “An involute compressed univalve; spire depressed on the upper part, beneath concave or largely umbilicate. Aperture mostly angular.” Having closely observed the animal and turned my attention to the shell, I was struck by the remarkable resemblance which it presented, although on a very small scale, to the *Euomphalus pentangulatus*; and a subsequent examination of other fossils, supposed to belong to the same genus (although some of them do not fulfil the generic characters

given by the author), has confirmed my impression. I believe, therefore, that this shell is a living, but minute, representative of that ancient genus, hitherto considered to be long ago extinct; and it is the more interesting inasmuch as no such representative has, I believe, been traced in any part of the tertiary system. The *Euomphalus nitidissimus* has a wide range in the European seas, extending from the Shetlands to Sicily, and probably far beyond these limits. I lately detected specimens among some minute shells from Sardinia, and I have recorded it as existing at Spezia and elsewhere on the Piedmontese coast. I have no doubt that it is the *Truncatella atomus* of Philippi; but I cannot account for his making such a mistake as he did in his memoir on the genus *Truncatella* of Risso in Wiegmann's 'Archiv für Naturgeschichte,' as well as in his elaborate work on the Sicilian Testacea, by not only describing the animal to be exactly like that of *Truncatella* (viz. furnished with two long tentacles, and eyes placed near their external bases), but giving in the former work a figure of it in accordance with that description. In the 'Archiv' for 1841, p. 54, he states, with respect to his *Truncatella atomus*, "Das Thier, dessen Bildung ich bei einer sechszigmaligen Vergrößerung sehr genau erkannte, stimmte auf das allervollkommenste mit dem der *Truncatella truncatula* überein." A similar mistake seems to have been committed by him in saying that the animal of his *Truncatella littorina* (our *Assiminia littorea*) was also similar to that of *Truncatella truncatula* or *Montagui*, which I have elsewhere adverted to. I observed among other drawings of Mollusca made by M. Deshayes during his scientific visit to Algeria about fifteen years ago, but not yet published, an admirable figure of this animal; but as he did not use a microscope, he failed to notice the cilia, and represented the heart as seen through the transparent shell, but which I suspect were the branchiæ. He informed me that he found two or three specimens, from which his drawing was made, at Lacalle, and that the animals were preserved and deposited in the museum of the Jardin des Plantes, where, however, they are not now to be found. The only congener of this species is, as far as is hitherto known, the *Skenea? rota* of Forbes and Hanley, which I believe is almost as extensively diffused as the other. Figures 15 *a, b*, in Pl. III., show the lingual ribband of *Euomphalus nitidissimus*, which appears to be quite as anomalous as the animal and shell, but bears some resemblance to the tongue of *Akera bullata*, as represented in Dr. Gray's most useful 'Guide to the Mollusca in the British Museum,' part I. p. 196. f. 111. I could not detect any divisional plates or septa in the interior of the upper whorls of the shell by making a section of it, although the exterior surface presented the appearance of them. They are found in *E. pentangulatus*. I believe the *E. rota* was known to Montagu, because in one of his letters to my late friend Mr. Dillwyn, dated in 1814 or 1815, he mentions the discovery of a very minute recent Ammonite-like shell which exactly corresponds with the description of *E. rota*. In Pl. III. f. 14. is represented a portion of the tongue of *Skenea planorbis*, to show how very different it is from that of the *Euomphalus*.

Stylifer Turtoni, iii. 226. Mr. Norman questions this being found on *Echinus Sphaera*; and he says that Mr. Alder has informed him that all the specimens he had met with were from *E. neglectus*.

Eulima nitida (Lamarck), Phil. i. 157 and ii. 134. I believe the British shells which have been usually referred to this species are specifically distinct from *E. polita*. Besides the subulate and more regularly tapering form of the spire and the oblong (instead of oval) aperture, which distinguish this species from *E. polita*, the latter has (especially in young individuals) a faint keel on the lower half of the last whorl. I have specimens from Zetland and various other parts of the Scotch coast, as well as from Guernsey. A shell sent by Professor Lovén to Mr. Alder, under the name of "*Eulima nitida*," and by the latter forwarded to me for examination, appears to agree specifically with our shells, although Lovén has not noticed the *E. polita* as a Norwegian species.

E. stenostoma. A young specimen was procured by Mr. Barlee in the Zetland dredgings.

Chemnitzia scalaris, iii. 251. In dredged sand from Belfast Bay. I am still of opinion that the *C. rufescens* of Forbes is merely the northern form or variety, and that it ought to be reunited to this species.

Odostomia conspicua, iii. 263. Zetland (*Mr. Barlee*).

O. Eulimoides, iii. 273; var. *O. pallida*, *b. gracilior*, anfractibus productioribus, Jeffr. in Ann. Nat. Hist. (2nd series) vol. ii. p. 336. Guernsey and Zetland. I have given a representation of this pretty variety in Pl. III. fig. 18 *a, b*.

O. Lukisii, n. s. Pl. III. fig. 19 *a, b*.

Testa subconica, solidiuscula, nitida, alba, striis longitudinalibus perpaucis vix conspicuis irregulariter notata, aliorsus glabra; anfractibus 5, convexiusculis, ultimo spiræ dimidium paullo superante, penultimo prominulo; apice obtuso; sutura distincta, insculpta; apertura ovali, superne in regionem columellarem contracta, subtus effusa; peristomate subcontinuo, labio reflexo; columella denticulo mediano prominente munita; umbilico parvo, angusto; long. $\frac{1}{10}$, lat. $\frac{1}{20}$ unc.

Although I am very unwilling to swell the list of British *Odostomia* with any more species, I cannot refrain from giving this, which I believe to be quite distinct from any of its numerous congeners; and Mr. Alder agrees with me in this belief. It has somewhat the aspect of *O. albella* (which is certainly, in our opinion, not a variety of *O. Rissoides*) in its shorter spire, much more convex whorls (especially the penultimate one), and the peculiar introversion and contraction of the peristome at its upper angle. From *O. Rissoides* it differs in wanting the turriculate form of that shell, which is occasioned by the great depth of the suture, and in its being more cylindrical, as well as in the greater prominence of the penultimate whorl and the contraction of the peristome. I have dedicated this species (without permission) to Dr. Lukis, as a trifling mark of the esteem in which I hold him as a scientific man. It is not very uncommon in the

sublittoral and coralline zones at Guernsey ; and I noticed a specimen among the shells which Mr. Barlee collected this year in the Shetlands.

O. albella, Lov. *O. Rissoides*, var., iii. 286. Salcombe, fide Alder (*Rev. Mr. Norman*) ; Oban (*Capt. Bedford*) ; Guernsey, with *O. Rissoides*. I still consider it to be distinct from that species. The spire in this is more cylindrical, and the whorls are never turriculate or so convex as in *O. Rissoides*. The circumstance also of their being found together, without any intermediate variation, is a strong argument in favour of their being distinct species.

O. acuta, iii. 269. Plymouth (*Rev. Mr. Norman*) ; Guernsey and Zetland (*J. G. J.*).

O. turrita, Jeffr. in Ann. Nat. Hist. (2nd series) vol. ii. p. 339. Coralline zone, Exmouth (*Mr. Clark*) ; Guernsey.

O. alba, iii. 278 ; var. A figure of this elegant variety will be found in Pl. III. f. 20 *a, b*.

O. nitida, iii. 280. Mr. Clark has found a specimen of this rare and local species at Exmouth.

O. cylindrica, iii. 287. Clyde district (*Rev. Mr. Norman*) ; in dredged sand from Belfast Bay (*J. G. J.*).

O. truncatula, iii. 294. Belfast Bay. Plymouth was the only previously known station for this species.

O. doholiformis, iii. 301. Guernsey.

Eulimella clavula, iii. 314. Guernsey ; very rare.

Truncatella Montagui, iii. 317. Newhaven, Sussex. I have shown, in Pl. III. fig. 21, the lingual ribband of this mollusk, which may be interesting as a further illustration of the relations which exist between *Truncatella* and *Assiminia*.

Natica monilifera, iii. 326. A very young *reversed* variety occurred to me in the Guernsey dredged sand.

N. sordida, iii. 334. Mr. Barlee obtained in the Zetland dredgings a young specimen which is of a yellowish-white colour, and marked with three brown interrupted or streaked bands.

N. Montagui, iii. 336 ; var. *alba*. A specimen of this pretty variety occurred to Mr. Barlee in the last Zetland dredgings.

N. Helicoides, iii. 339. A specimen procured by Mr. Barlee in Zetland, and now in his possession, is of the enormous dimensions of one inch and five-eighths in length and one inch in breadth.

N. clausa (Sowerby), Lov. 17. I found a few young specimens, apparently quite recent and fresh, in dredged sand from Belfast Bay, which Mr. Waller kindly sent me. It is true that this species occurs as a Pleistocene fossil in the Clyde bed ; but the aspect and texture of specimens from that locality are very different from those of my shells. It inhabits the Norwegian coast in company with *Terebratula caput-serpentis*, *Crenella decussata*, and many others which also are found living in Belfast Bay ; and I believe that *Buccinum* (or *Astyris*) *Hölboli*, which has been taken in the same part of the Irish Sea, has not yet been discovered as Pleistocene, though it is also a Norwegian species. Among the shells from the Turbot Bank in Belfast Bay, I detected some which were unquestionably fossil, having their texture

completely changed and mineralized. The geological nature of the rocks of the adjacent coast, according to Mr. Hyndman in his Report of the Belfast Dredging Committee (Brit. Assoc. Rep. for 1857, p. 229) is *Secondary*; and it does not appear that there are any Tertiary strata in the same locality. For the present, I am still inclined to consider all the shells of Arctic or Northern species, which have been lately taken in Belfast Bay, as *recent*. This term is of course comparative in respect of time; and as the shells of Mollusca are nearly indestructible by the ordinary agencies of air and water (especially when kept continually submerged in the sea, and never exposed to atmospheric influence), the specimens in question may have occupied the Irish sea-bed ever since the commencement of the present geological epoch—viz. for many thousands of years. It is therefore not improbable, for the reasons above given, that *Natica clausa*, *Buccinum Höbollii*, with other boreal species, will sooner or later be discovered living in or near to the place where the shells now occur.

Recluzia aperta. Pl. III. fig. 22 *a-c*.

Testa globosa, tenuis, cretaceo-alba, epidermide fusco crasso rimato induta, rugis angustis confertis spiraliter cincta; spira brevi, obtusa; anfractibus 5, convexis, ultimo spiram superante; sutura cælata; apertura rotundata, infundibuliformi, utrinque subeffusa; peristomate continuo; labio columellæ annexo, reflexo; columella sinuata, ad basin tuberculo obtuso instructa; umbilico parvo, angusto, labio fere obtecto; long. $\frac{7}{12}$ unc., lat. eadem.

This is perhaps the *Natica aperta* of Lovén's Index, p. 17, though his comparison of that species with *Sigaretus* and the *Natica flava* of Gould, as well as certain discrepancies in his description, make me somewhat hesitate before considering my shell to be specifically identical with his. If they are not the same, I hardly think Lovén's shell belongs to the same genus; and in any case therefore the name I have adopted may serve for my shell. This evidently is congeneric with the *Recluzia* of M. Petit, which is described in the 4th volume of the 'Journal de Conchyliologie,' p. 117. Of the two species assigned by the author to this genus, I have seen one (*R. Rollandiana*); but it appears that, of the other species (*R. Jehennei*), only the typical specimen is supposed to exist. The first of these species came from Mazatlan, and the other from the Red Sea. They are both said to be destitute of an operculum,—a character (although negative) which is common to Lovén's shell, as well as mine; but M. Petit states, on the authority of Captain (now Admiral) Jehenne and Captain Passama, that the animal had a vesicular appendage or float, like that of *Ianthina*. This is remarkable, as the genus is allied, in many respects, to *Felutina*. *Natica Kingii* seems also to have some affinities to this genus, although it differs in the want of an umbilicus and the nature of the epidermis. My specimen, which appears to be semifossilized, or else in bad condition, was obtained by Mr. Barlee in the last Zetland dredgings. When

the shell was brought to him by our dredger, it had a good deal of the epidermis adhering to it, of most of which, however, the shell has been unfortunately deprived in an attempt to clean it. An eminent naturalist, to whom the specimen was submitted for his opinion, pronounced it to be recent, because of its retaining the epidermis; but the persistence of such substances seems to be coeval with shells which are undoubtedly fossil. In answer to an inquiry I have made of Mr. Searles Wood on the subject, he says, "There cannot be much difference of opinion respecting the preservation and existence of the epidermis and ligament in the fossils of the *uppermost Tertiaries* in this country. I do not see the epidermis upon the few specimens of *Cyrena* in my cabinet; but in a specimen of *Unio littoralis* from Clacton I am now looking at, the valves are united and the ligament quite perfect, and it has on it some of the epidermis; besides which, the ligament is preserved on some of the Crag bivalves which are of older date."

Lachesis minima, iii. 577; var. *alba*. Guernsey; but rare.

Litiopa Bombyx. In Mr. Pickering's fine collection of British land and freshwater shells, I noticed a specimen appearing to belong to this pelagic species, and which he had taken at Gravesend, mixed with *Rissoa ventrosa* and other unquestionably indigenous shells. It is, however, much smaller than *L. Bombyx*, and has the upper whorls minutely tuberculated, the rest of the shell being smooth; so that it may be a species of *Melanopsis*. If the former, it has probably been dropped from Gulf-weed (*Sargassum vulgare*), which is known occasionally to visit our shores. Mr. Lukis told me that he saw, about fifty years ago, in a small bay at Guernsey, a bank of this weed, several feet high, which had been thrown up by the sea.

Triforis adversa. *Cerithium adversum*, iii. 195. A pale yellowish-white variety occurs in Guernsey; but it is very rare. The siphonal fold of the mantle, and the peculiar canal of the shell, are surely sufficient grounds for separating this genus from *Cerithium*, independently of its being always heterostrophe. Some of these characters indicate a nearer relation to *Cerithiopsis* than to *Cerithium*. The operculum is, however, Littorinan.

Cerithiopsis tubercularis, iii. 365. Mr. Norman says that a specimen in his cabinet, from Arran, N. B., measures 5 lines long and $1\frac{1}{2}$ broad, and that it has fourteen whorls remaining, at least three more having been broken off.

C. pulchella, var. *alba*. Guernsey.

C. metula. *Cerithium metula*, iii. 198. My largest specimen, which is from the Shetlands, measures more than $\frac{7}{10}$ ths of an inch in length and $\frac{2}{10}$ ths in breadth. Although the animal is not known, the deep canal of the shell, as well as the operculum, which is strictly Muricidal, would, I think, entitle it to a position in *Cerithiopsis*, and not in *Cerithium*.

C. Naiadis. One of the results of our Zetland dredgings was the acquisition of two small and imperfect specimens of a new and interesting species, which Mr. M'Andrew took on the coast of Norway.

Mr. Woodward has undertaken to describe it, with other Norwegian shells, in the 'Annals.'

C. nivea, n. s. Pl. III. fig. 17 *a, b*.

Testa conoidea, turrita, crassa, nitida, alba, costis longitudinalibus rectis compressis (18 in anfractu ultimo) et spiralibus intermediis 6 instructa; anfractibus 6-8, modice convexis; sutura distincta; basi carina marginali cincta; apertura ovata, tertiam spiræ partem subæquante, superne acutangulata, subtus effusa; canali brevissimo, recto; columella arcuata, incrassata; long. $\frac{3}{10}$, lat. $\frac{1}{8}$ unc.

Mr. Hyndman discovered two specimens in shell-sand which had been dredged from the Turbot Bank in Belfast Bay, and obligingly presented me with the one above described. Both are worn shells, and neither of them is quite perfect; but they cannot be mistaken for any other species. They have somewhat the appearance of the *Strombus Turboformis* of Montagu (Suppl. p. 110); but the latter wants the spiral intercostal striæ and the basal keel, which are evident in this.

Buccinum undatum, iii. 401. I found a dwarf and thin variety on the shores of the Solent Water at Southampton,—a full-grown specimen measuring not quite an inch and a quarter in length. Other species in the same locality are depauperated, perhaps owing to the chemical nature or quality of the water.

B. ciliatum. *Tritonium ciliatum*, Fabr. F. G. p. 401. no. 402. Mixed with the deep-water variety of *B. undatum* from the Shetlands, I found an adult and several half-grown specimens of the above distinct and remarkable species. It is rather more ventricose than the variety of *B. undatum*, and the transverse striæ are much more numerous; but the especial character which distinguishes the two species (as Fabricius remarked) is that the epidermis in this is raised into short close-set hair-like tufts. It appears to be the same species as that which Professor E. Forbes noticed and figured in his "Records of Dredging" (Mag. of Nat. Hist. vol. viii. p. 593. fig. 62), and for which he suggested the name of "*Zetlandicum*," but which, in a subsequent part of the same paper, he considered, as well as *Buccinum fusiforme*, to be only varieties of *B. undatum*. This species cannot be identical with *B. Humphreysianum*, as conjectured by the authors of the 'British Mollusca' (iii. 411, foot-note), because the latter never has any epidermis, even in the living state.

B. acuminatum (Broderip), Zool. Journ. v. p. 44. *B. undatum*, monstr. B. M. iii. 405. This form appears to be constant, but rare; and I believe it constitutes a distinct species. I have specimens from Cork and the mouth of the Thames. The typical specimen in the British Museum is said to have cost £12, being the highest price I have known to be paid for a British shell.

Fusus Islandicus, iii. 416. Weymouth (*Mr. Thompson*).

F. propinquus, iii. 419. With the ordinary form, from deep water in the Shetlands, I observed a monstrosity which appears to agree with the description of Mr. Alder's variety, noticed at p. 420.

The spire is shorter, the volutions are more swollen, and the transverse striæ on the last whorl are coarser than in the typical or ordinary form.

Mangelia Trevilliana, iii. 452. In dredged sand from Belfast Bay.

M. purpurea, iii. 465; var. *alba*. Zetland.

M. cancellata. In a living specimen, which was procured by Mr. Barlee in Zetland, the tip of each nodule or point of junction of the ribs is delicately tinged with pink.

M. reticulata. *Pleurotoma reticulatum* (Bronn), Phil. i. 196 and ii. 165. A specimen of this lovely shell was taken in the Shetlands; and it agrees exactly with the specimen from Guernsey, which I noticed in the 'Annals' for August last (vol. ii. no. 8. p. 131) under the name of *M. cancellata*. That species, however, differs from this in its more slender shape, and in not being turriculate, as well as in the longitudinal ribs not extending to the suture of each whorl, but leaving an interstice, which is only marked by the transverse striæ. The largest of my specimens does not measure half an inch in length; but some from the Mediterranean attain nearly double that size.

M. elegans, iii. 473. Mr. Barlee procured, in his Zetland dredgings, a specimen of this shell. It has been hitherto considered to be a Southern species.

M. Ginnanniana. *Pl. Ginnannianum*, Phil. i. 198 (*Bertrandi*) and ii. 168. *M. nebula*, var. *pyramidata*, B. M. iii. 478. This appears to be a distinct species, as well as *M. lævigata* (*Pl. lævigatum*, Phil.). It differs from *M. nebula* in being less slender, in the peculiar mode of its coloration, and in the transverse striæ being much finer and more close-set. It is also of a larger size, one of my specimens measuring nearly five-sixths of an inch in length. Mr. Barlee has taken it off the Arran Isles, county Galway, and in Zetland; and Mr. Clark has found it at Exmouth, together with *M. nebula* and *M. lævigata*. It is most probably the *M. nebula* of Lovén, which he says differs from the English form in the above particulars.

M. brachystoma, iii. 480. Weymouth (*Mr. Thompson*).

M. striolata, iii. 483. Falmouth and Oban (*Rev. Mr. Norman*).

Gasteropoda Opisthobranchiata.

Bulla cornea, Lam. vi. (2.) p. 36. Specimens of the true *B. hydatidis*, or what is usually called the Mediterranean species (though both equally inhabit that sea), were found at Guernsey, many years ago, by Mr. Lukis; and I also found the *B. cornea* at Serk by dredging. There can therefore be no doubt as to the propriety of thus distinguishing the two species, as suggested by the authors of the 'British Mollusca.' The shell of *B. hydatidis* is narrower and more solid, and it has the crown or apex rather deeply umbilicated. It appears to be the *Haminæa elegans* of Leach's 'Synopsis of the British Mollusca,' p. 42.

Cylichna mammillata, iii. 514. Guernsey.

C. nitidula, iii. 515. Belfast Bay; very rare.

C. umbilicata, iii. 519. With the last.

C. Lajonkaireana. *Bulla Lajonkaireana* (Basterot), S. Wood, Cr. Moll. p. 178, tab. 21. f. 5 a-c. I found this species at Guernsey, mixed with a dwarf variety of *C. obtusa*; but it is rare. Mr. Barlee has also taken it by dredging off Arran Isle, on the Galway coast. The spire is produced and pointed, resembling in this respect *Tornatella fasciata*; and the upper lip of the aperture joins the columella considerably lower than in *C. obtusa*. It had only been previously known in a fossil state; and Mr. Wood erroneously referred to it the *Bulla mammillata* of Philippi, the apex of which is truncated. Dujardin appears to have suggested the affinity of this species to *Tornatella*.

Scaphander lignarius, iii. 536; var. *alba*. Zetland; but rare. Dr. Lukis informs me that the shells of *S. lignarius* are almost invariably found broken when they are taken alive, and that the fishermen think the animal bites off the lip of the shell when it finds itself a prisoner.

S. zonatus. *Bulla zonata*, Turton in Mag. Nat. Hist. vol. vii. p. 352. *S. librarius*, Lov. p. 10. A young specimen has occurred to me among the Zetland shells, and it exactly corresponds with specimens collected by Mr. M'Andrew in Norway. The form is more oval and less oblong than that of a specimen of *S. lignarius* of the same size, the upper lip is rather truncated, and not so acute, and the crown is broader and umbilicated, which last is a character not belonging to the common species. I believe, on reconsideration, that this is Turton's species, as he distinguished it from the young of *S. lignarius* by its being of a more conic-oval shape, with the volutions more loosely connected, and having the crown *umbilicated*. The sculpture, however, appears to be the same in both species, as Lovén has remarked. In the young of *S. lignarius* are found the alternate zones and minute granular dots noticed by Turton, but not by Forbes and Hanley; although these dots are not "raised," as stated by the former: they are, on the contrary, impressed punctures. Unfortunately, Turton's specimen is in my cabinet at Swansea; and I cannot at present compare it with the Zetland and Norwegian shells.

Philine punctata, iii. 547. Bantry (*Rev. Mr. Norman*).

Pleurobranchus plumula, iii. 559. Bantry (*Rev. Mr. Norman*).

Gasteropoda Pulmonifera.

Limax gagates, iv. 24. Tenby; Torquay; Guernsey; Cumbrae (*Rev. Mr. Norman*).

Testacellus Maugei, iv. 28. I found this species, in company with the late Mr. Miller, who was then the curator of the Bristol Institution, about thirty years ago, in Messrs. Miller and Sweet's Nursery Grounds at Clifton; and it appears to have since become extensively spread and almost naturalized in this country. M. Moquin-Tandon says that it has been found at Dieppe, and he adds that it was probably brought there with some exotic plant. Mr. Norman

says, "I am at a loss to understand why this species was excluded from 'The British Mollusca.' More than fifty years ago, *Testacellus Maugei* was discovered in what was then Messrs. Miller and Sweet's Nursery Grounds at Clifton, and from that time to the present it has continued to be found in that locality in considerable numbers. I have had as many as five dozen sent to me alive at the same time. The following are other localities in which *T. Maugei* has occurred, and to which it has doubtless been introduced among plants from the Clifton nurseries: viz. Bath, Corsham, Brislington, the gardens of Sir A. Elton, and nursery-gardens at Clevedon and Taunton. I have likewise seen a specimen which was taken at Plymouth, and another which was taken at Cork by Mr. Wright." I may add to this list of localities my own garden at Norton near Swansea, which was occasionally supplied with plants from the Clifton Nursery Grounds.

Zonites excavatus, iv. 40. Isle of Cumbræ (*Rev. Mr. Norman*).

Helix aspersa, iv. 44. A pretty dwarf variety, with a thin shell, is not uncommon on the downs of the south coast in Guernsey.

H. arbustorum, iv. 48. Mr. Pickering has found a dwarf variety, which is not larger than that of the Alps, in meadows by the side of the River Lea in Hertfordshire.

H. revelata, iv. 70. Plymouth and Land's-End (*Rev. Mr. Norman*).

H. fusca, iv. 77. Plymouth and Melrose (*Rev. Mr. Norman*).

Bulimus Lackhamensis, iv. 89. Sherborne Wood, Oxon; very abundant (*Rev. Mr. Norman*).

Azeca tridens, iv. 128. Brockley Combe, Somerset (*J. G. J., Mr. Barlee*, and *Rev. Mr. Norman*). It is a local species.

Vertigo sexdentata (Montagn). *Pupa antivertigo*, iv. 109. Port des Moulins, Serk; Guernsey.

V. (Pupa) pusilla, iv. 111. Largs (*Rev. Mr. Norman*).

Limneus peregr; var. *lineata*, iv. 165. Capt. Bedford has sent me a charming little variety, marked with narrow alternate zones of white and brown, which he found in Ulva Isle, on the west of Mull.

L. acutus. Capt. Bedford informs me that he found this species, not in the neighbourhood of Oban, but near Corstophane, N. B. Mr. Barlee has also sent me specimens which he took in a pond at Yoxford, Suffolk.

Physa fontinalis, iv. 141; var. *alba*. Mr. Bean and Mr. Webster have sent me specimens of this pretty variety, which were found near Birkenhead.

Conovulus bidentatus; var. *alba*, iv. 192. Newhaven, Sussex.

Otina otis, iii. 321. Weymouth (*Mr. Thompson*); Arran, N. B. (*Rev. Mr. Norman*). The animal dies after it has been immersed some hours in sea-water.

Corrigenda.

Lepton sulcatulum, Ann. Nat. Hist. (3rd series) vol. iii. p. 34, Pl. II. f. 2. There is a minute, but indistinct, cardinal tooth in the

right as well as the left valve, as shown in the plate; and the description must be amended in this respect.

Sphærium. I omitted to mention that Mr. Jenyns seems to have been fully aware of the quasi-natatory habits of *S. calyculatum* as well as of his *Pisidium obtusale*; and that a satisfactory explanation of this peculiar mode of progression in the former animal would be found at p. 12 of his valuable and interesting Monograph.

S. calyculatum. In page 35 of the last Number (three lines from the bottom) read "slow" instead of "short."

Pisidium Recluzianum. For M. Bourguignat's species read *P. Recluzianum*.

1 Montagu Square, London, Jan. 1859.

EXPLANATION OF THE PLATES.

PLATE II.

Fig. 1. *Kellia lactea*, hinge of, magnified.

Fig. 2. *Lepton sulcatulum*: *a*, natural size; *b*, highly magnified; *c*, hinge and teeth of right valve, viewed horizontally; *d*, hinge and teeth of left valve, viewed horizontally; *e*, hinge and teeth of right valve, showing the ligament; *f*, hinge and teeth of left valve, showing the ligament; *g*, front view, showing the curvature of the margin.

Fig. 3. *Pisidium roseum*: *a*, natural size; *b*, front view; *c*, side view.

Fig. 4. *Mytilus Galloprovincialis*, natural size.

Fig. 5. *M. unguatus*, natural size.

Fig. 6. *Limopsis pellucida*: *a*, natural size; *b*, front view, highly magnified; *c*, side view, highly magnified; *d*, hinge, very highly magnified; *e*, interior margin, very highly magnified.

Fig. 7. *Terebratula capsula*: *a*, natural size; *b*, highly magnified.

Fig. 8. *Argiope cistellula*, young: *a*, natural size; *b*, highly magnified.

PLATE III.

Fig. 9. *Chiton gracilis*, natural size: *a*, segment magnified, to show the granulation of the valves and the marginal band; *b*, a portion of the lingual riband, highly magnified, and showing at A the division of the falcate teeth.

Fig. 10. *C. fascicularis*, a portion of the lingual riband of, highly magnified.

Fig. 11. *C. discrepans*, ditto, ditto.

Fig. 12. *Assiminia Grayana*, ditto, ditto.

Fig. 13. *A. littorea*, ditto, ditto.

Fig. 14. *Skenea planorbis*, ditto, ditto.

Fig. 15. *Euomphalus nitidissimus*, ditto, ditto: *a*, front view; *b*, side view.

Fig. 16. Ditto, animal of: *a*, natural size; *b*, highly magnified; *c*, operculum, highly magnified.

Fig. 18. *Odostomia Eulimoides*, var. *b*. Jeffr.: *a*, natural size; *b*, magnified.

Fig. 19. *O. Lukisii*: *a*, natural size; *b*, magnified.

Fig. 20. *O. alba*, var.: *a*, natural size; *b*, magnified.

Fig. 21. *Truncatella Montagu*, a portion of the lingual riband of, highly magnified.

Fig. 22. *Recluzia aperta*: *a*, front view, natural size; *b*, back view, natural size; *c*, magnified to show the sculpture and epidermis.

Fig. 17. *Cerithiopsis nivea*: *a*, natural size; *b*, magnified.